RECEIVED
MAY 1 1
VET. MED. LIBRARY

Vet. Med

Vol. 69. No. 16. Issue No. 4124 445-462

APRIL 20th, 1957

THE VETERINARY RECORD

The Journal of the British Veterinary Association

OHIO STATE UNIVERSITY
MAY 13 1957
LIBRARY

Patron: Her Majesty the Queen

Principal Contents

VETERINARY JOURNALISM

WASTAGE AND DISEASE INCIDENCE IN DAIRY HERDS
F. W. Withers

CORNEAL GRAFT IN A DOG
J. R. Holt

OPERATION FOR CORNEAL DERMOID IN THE DOG
C. F. B. Hofmeyr

THE WILLIAM HUNTING AWARDS

IN BRIEF

CURRENT LITERATURE

NEWS AND COMMENT

CORRESPONDENCE

Contents

Editorial :
Veterinary Journalism 445

General Articles :
Wastage and Disease Incidence in Dairy Herds ... 446
F. W. Withers, M.A., PH.D., M.R.C.V.S.

Corneal Graft in a Dog 454
J. R. Holt, M.R.C.V.S.

Operation for Corneal Dermoid in the Dog 455
C. F. B. Hofmeyr, D.SC.

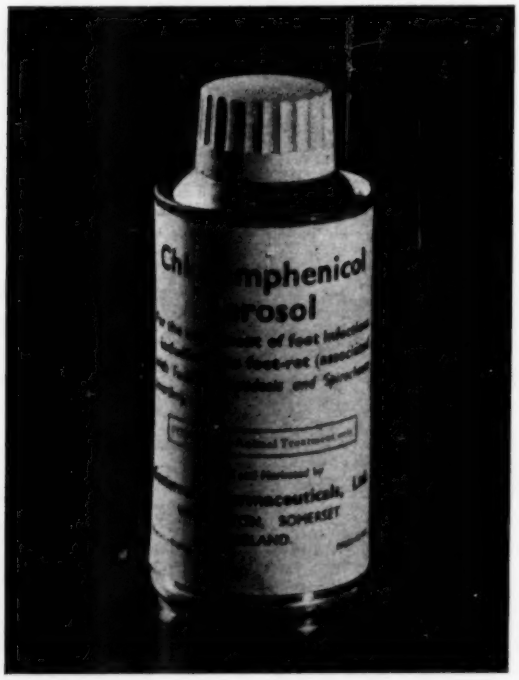
In Brief :
Toxicology of Cadmium 456

Current Literature :
Report 457
Book Review 457
Abstracts 458

News and Comment :
Irish Veterinarian Called to America 454
Fowl Pest 456
The William Hunting Awards 459
The Veterinary College of Vienna 459
The Commonwealth List 459
University News, Liverpool 459
The London Van Horse Parade 459
Personal 460
R.C.V.S. Obituary 460
Coming Events 460
Addresses of Disease Infected Premises 460

Correspondence :
Lungworms of British Sheep 461
J. H. Rose, PH.D., B.SC.
J. F. Michel, M.A., DIP. AG. SCI.
S. T. Harriss, B.SC., M.R.C.V.S., D.V.S.M.

Bovine Obstetrics 461
D. P. McIntee, M.R.C.V.S.
A. L. L. McKerrell, M.R.C.V.S.
J. Sommerville, M.R.C.V.S.
W. S. Johnston, M.R.C.V.S.
H. Fraser, M.R.C.V.S.
J. F. D. Tutt, F.R.C.V.S.
R. Kenworthy, B.V.SC., M.R.C.V.S.



Our ORIGINAL

CHLORAMPHENICOL AEROSOL

has proved its efficiency

It ensures a quick and deep penetration of the minute particles, and it is clean and easy to use. The inclusion of gentian violet acts as a marker.

Each unit of CHLORAMPHENICOL AEROSOL 10% contains sufficient material for 40 to 50 feet.

Available in cases of :
6 × 114 gramme units *and*
12 × 114 gramme units

SOMERSET PHARMACEUTICALS LTD
WELLINGTON SOMERSET - *Phone:* Wellington Som. 2244

The
VETERINARY RECORD

Founded by William Hunting, F.R.C.V.S., in 1888

7, MANSFIELD STREET, PORTLAND PLACE, LONDON, W.1. MUSEUM 6541

No. 16 APRIL 20th, 1957 Vol. 69

Registered for Transmission as a Newspaper *Price 2s. post free*

Veterinary Journalism

THOSE of our readers who see copies of the *North American Veterinarian* will have been interested in the recent change of format in that journal which has made of it, in appearance, the most modern among veterinary publications so far as our experience goes. The style is transatlantic and may not be to everyone's liking; though from the many published expressions of satisfaction the journal's readers have accepted the new presentation with enthusiasm. Certainly the *North American Veterinarian* yields little or nothing in appearance and in journalistic expertise to the best among lay magazines; and while not, necessarily, wishing to follow it all the way—for the transplantation of exotic seeds is not always followed by the result desired—it is fruitful to consider what lessons it has to offer.

It will be generally agreed that clear type, good margins, and a reasonable number of sub-divisions add to the attractiveness, as to the readability, of any publication however abstruse its subject matter may be. Because text is serious in its content, it need not be fordidding to the eye. Neither ought it to be expressed in terms either esoteric and ponderous, nor interlarded with scientific jargon. It has been alleged that Shakespeare used a vocabulary amounting to only a fraction of the dictionary, and though the language of poetry is no exact criterion for the language of science it is not without its example.

A further virtue in our American contemporary is the comparative brevity and pithiness of much of its text. This not only allows of a great variety of subject matter but makes for more pleasant reading. It is accepted that, from the point of view of an author, the thing to be desired is publication; but in the broader view the literature of the profession has for its purpose that of being read, particularly by those whose duty it is to apply the findings of the laboratory in the field. There are subjects which demand considerable length if they are to be properly treated and made fully intelligible; but even in such cases conscientious self-criticism by the author, and the acceptance of advice from other workers can lead in many cases to pruning and improvement.

Owing to the different traditions of veterinary practice in the United States it is not possible to imitate some of the "brighter" features of their literature. By comparison, therefore, our own journal may invite the criticism of being, in places, a little stodgy. The problem is to combine attractiveness and readability with professional dignity, the more especially as THE VETERINARY RECORD is the official journal of a great Association. Nevertheless, there is an attractive liveliness about the American publication which should help to correct, in others, a too excessive traditionalism or the tendency to fall into a rut.

It may be observed that the production of a "live" journal must be a joint endeavour between those who publish it and those who receive it. We have referred before to the value, for example, of correspondence and of items of news, and at the present time our columns are benefiting from the correspondence on bovine obstetrics which has arisen from the vigorous expression of his experiences by a member in practice. May others do likewise, for there is nothing more frustrating than the experience of the vicar in *Crome Yellow* whose sermons were a flail—but the souls of whose congregation were of rubber so that the flail rebounded.

In his Presidential address last year Mr. Wilkinson pointed the way in which a satisfying publication is created and maintained:

"THE VETERINARY RECORD is still the only weekly veterinary journal in the world, and is quoted and used on occasion, text-book fashion, the world over. I can assure you that the Editorial Committee is full of ideas for continued improvement. Nevertheless, this improvement is, to no small extent, in your hands. THE RECORD cannot be expected to publish material with which it is not supplied."

Wastage and Disease Incidence in Dairy Herds

BY
F. W. WITHERS
Ministry of Agriculture Veterinary Laboratory, Weybridge

IN a previous article (*Vet. Rec.* **67.** 605), the results of a pilot survey of wastage and disease incidence in dairy herds in the counties of Surrey, Berkshire and Wiltshire during the years 1950–1 and 1951–2 were described. In the following two years the survey was continued in these counties. Table I shows the numbers of herds surveyed in the years 1951–2 to 1953–4 and those lost by wastage or added by new recruitment.

TABLE I

County	Numbers of herds					
	Surveyed 1951–2	Lost	Added	Surveyed 1952–3	Lost	Surveyed 1953–4
Surrey	55	19	—	36	12	24
Berkshire	58	17	—	41	10	31
Wiltshire	50	11	54	93	16	77
Totals	163	47	54	170	38	132

The tendency for these samples to contain an increasing proportion of attested and T.T. licensed herds due to the progress of attestation and the loss of non-designated herds is shown in Table II.

TABLE II

	1950–1	1951–2	1952–3	1953–4
Proportion of attested or T.T. herds	61 per cent.	67 per cent.	79 per cent.	82 per cent.

In the present article the results of the survey during the years 1952–3 and 1953–4 are described. The data were recorded on Cope-Chat cards and have been analysed by the Department of Statistics, Rothamsted Experimental Station. It has therefore been possible to give more detailed analyses than in the work previously published.

Basic Data for the Herds Surveyed

Table III gives the numbers of herds with their designations and dairy cow populations.

The size-distribution of the herds is shown in Table IV (numbers of herds).

The age-distribution of the cows is shown in Table V based on the numbers of parturitions in successive lactations.

Table VI gives the seasonal distribution of calvings.

Deaths and Disposals

Deaths and disposals have been recorded in six categories as in the pilot survey. In 1953–4 animals disposed of for more than one reason, *e.g.*, sickness and poor yield, old age and infertility, etc., were noted. This applied to 10 per cent. of the disposals in that year (111 cows). For the purpose of classification, however, these cases have been allotted to the categories regarded as the more important by the recorder.

TABLE III

County	1952–3					
	Attested and T.T.		Others		Totals	
	Herds	Cows	Herds	Cows	Herds	Cows
Surrey	24	752	12	295	36	1,047
Berkshire	34	1,224	7	164	41	1,388
Wiltshire	76	3,116	17	433	93	3,549
Totals	134	5,092	36	892	170	5,984

County	1953–4					
	Attested and T.T.		Others		Totals	
	Herds	Cows	Herds	Cows	Herds	Cows
Surrey	15	555	9	197	24	752
Berkshire	27	945	4	104	31	1,049
Wiltshire	66	2,822	11	256	77	3,078
Totals	108	4,322	24	557	132	4,879

TABLE IV

Sizes No. of Cows	1952–3			
	Surrey	Berks	Wilts	Totals
Up to 20	8	6	11	25
21 to 40	20	22	49	91
41 to 60	7	10	21	38
Over 60	1	3	12	16
Totals	36	41	93	170
Mean sizes No. of Cows	29	34	38	35

Sizes No. of Cows	1953–4			
	Surrey	Berks	Wilts	Totals
Up to 20	5	5	13	23
21 to 40	13	15	35	63
41 to 60	5	9	16	30
Over 60	1	2	13	16
Totals	24	31	77	132
Mean sizes No. of Cows	31	34	40	37

TABLE V

Lactation	1	2	3	4
1952–3 No.	1,320	1,276	1,180	847
Per cent.	21·7	21·0	19·4	14·0
1953–4 No.	1,128	1,038	781	744
Per cent.	22·6	20·8	15·7	14·9

Lactation	5	6	7	Older
1952–3 No.	523	402	226	300
Per cent.	8·6	6·6	3·7	5·0
1953–4 No.	467	354	215	256
Per cent.	9·4	7·1	4·3	5·1

TABLE VI

Month of calving	Numbers of calvings		Quarterly Distribution	
	1952–3	1953–4	1952–3	1953–4
			Per cent.	Per cent.
October	1,160	855	40·5	37·9
November	746	589		
December	551	445		
January	409	421	20·4	21·8
February	420	339		
March	411	328		
April	277	268	13·1	13·0
May	280	199		
June	244	179		
July	239	230	26·0	27·3
August	448	373		
September	889	757		
Total parturitions	6,074	4,983	100·0	100·0

Table VII gives the deaths and disposals as percentages of total cow stock and of total disposals. Category V (Disease and Accident) has been divided to show separately animals disposed of on account of reaction to tuberculin.

Deaths

Only actual deaths "on the farm" are included. Cows destroyed on account of sickness or accident have been allotted to category V. Mortality has remained fairly steady between 1·1 and 1·5 per cent. of cow population during the four years 1950–1 to 1953–4.

In analysing the causes of death the largest group is that directly associated with parturition, *viz.*, injuries or infection following difficult calvings or stillborn calves and deaths due to milk fever. In 1952–3 35 per cent. and in 1953–4 25 per cent. of deaths were due to such causes. Second in importance was bloat, responsible for 20 and 25 per cent. of the deaths respectively. Grass tetany (hypomagnesaemia) accounted for 8 per cent. of the deaths in each year and acute mastitis or summer mastitis for 6 and 10 per cent. respectively. Smaller numbers of deaths were caused by accidents, traumatic pericarditis, pneumonia, various forms of poisoning, anthrax and Johne's disease. Approximately 10 per cent. of all deaths were undiagnosed.

TABLE VII

	1952–3		1953–4	
	Percentage of		Percentage of	
	Total cows	Total disposals	Total cows	Total disposals
I Deaths	1·1	4·6	1·2	5·6
II Aged	1·8	8·0	1·2	5·6
III Infertile	3·5	15·2	2·8	12·6
IV Poor Yield	6·3	27·6	5·7	25·8
V (*a*) Disease and accident	4·4	19·4	5·1	23·3
(*b*) Reactors	1·0	4·2	2·7	12·1
Herd wastage	18·1	79·0	18·7	85·0
VI Surplus	4·8	21·0	3·3	15·0
Total deaths and disposals	22·9	100·0	22·0	100·0
Total cows	5,984		4,879	
Total deaths and disposals	1,378		1,075	

Mortality shows a steady rise with age which is illustrated in Table VIII. Served heifers are included in this table to show their low death rate compared with cows.

TABLE VIII

	1952–3			1953–4		
	No. in each group	Deaths		No. in each group	Deaths	
		No.	Per-cent.		No.	Per-cent.
Served heifers	1,408	4	0·3	1,156	1	0·1
Cows :						
Lactation 1	1,320	10	0·8	1,128	10	1·0
2	1,276	10		1,038	11	
3	1,180	11	1·2	781	5	1·2
4	847	8		744	10	
5	523	11		467	9	
6	402	8	1·5	354	6	1·8
7	226	4		215	6	
8 and over.	300	2		256	3	

Old Age, Infertility and Poor Yield

These categories and category V (disease and accident) tend to overlap as approximately 10 per cent. of the animals disposed of are culled for more than one reason. As already stated, in these cases animals have been allotted to the category considered the more important. Within practical limitations the definitions applied have been as follows :—

II. Aged.—A cow over eight years old or that has had more than six calves, if age is the primary reason for disposal.

III. Infertility.—Served three times or more and not in-calf, anoestrus, nymphomania or unlikely to breed again.

IV. Poor Yield.—Yield below the herd standard and disposed of primarily on that account.

The disposals in these three categories taken together have not varied greatly. The aggregate figures for the

four years 1950–1 to 1953–4 inclusive are : 10·4, 11·7, 11·6 and 9·7 per cent. of total cow stock respectively.

Disease and Accident

Reactors to the tuberculin test have, as previously, been placed in this category. All cases of Johne's disease are also included as they are invariably disposed of. Table IX gives details for the four years for comparison.

TABLE IX

PERCENTAGES OF TOTAL COWS DISPOSED OF ON ACCOUNT OF DISEASE AND ACCIDENT INCLUDING REACTORS

	1950–1	1951–2	1952–3	1953–4
Reactors	4·5	1·6	1·0	2·7
Johne's disease	1·0	0·8	0·9	0·8
Other sickness and accidents	2·5	3·0	3·5	4·3
Totals	8·0	5·4	5·4	7·8

The disposals of reactors reflect the progress of attestation in the herds surveyed and in the particular years. Disposals on account of Johne's disease have varied very little in the four years in spite of the changes in the herds surveyed. There has been a steady rise in disposals due to general sickness other than Johne's disease and accidents. The increase in 1953–4 was mainly due to the serious outbreak of summer mastitis in the summer of 1954.

Herd Wastage

Wastage is represented by the first five categories above consisting of cows disposed of outside the dairy industry. The totals for the two years under review were 18·1 and 18·7 per cent. of the cow stock respectively. It has varied from 19·9 to 18·1 per cent. in the four years 1950–1 to 1953–4 inclusive.

Surplus Disposals

As pointed out in the previous article these depend on farm policy and the figures vary with the particular herds surveyed. The surplus disposals for 1952–3 and 1953–4 were 4·8 and 3·3 per cent. of total cows. The figure has varied from 7·1 to 3·3 per cent. in the four-year period.

Total Deaths and Disposals

These were 22·9 and 22·0 per cent. of total cow stock in the two years respectively. For the whole four-year period (1950–1 to 1953–4) this figure has varied from 22 to 27 per cent. mainly depending on the amount of surplus sales.

Total Sickness

Total sickness for all herds surveyed is summarised in Table X. The figures are *case* incidences, each attack of disease being regarded as a case. The incidences for conditions associated with parturition are calculated on the total calvings. For the remaining disease conditions enumerated incidences are based on the total cow stock. Cases of disease occurring in animals that subsequently died or were disposed of are included. Reaction to the tuberculin test *per se* is omitted.

TABLE X

CASE INCIDENCES PER CENT. OF TOTAL SICKNESS

Conditions associated with parturition	1952–3	1953–4
Total number of parturitions ...	6,074	4,983
Difficult calvings	1·4	1·5
Stillbirths	3·3	3·1
Abortions	2·4	3·3
Retained afterbirth	2·5	2·3
Milk fever	2·5	3·7
Total associated with parturition ...	12·1	13·9
Other disease conditions		
Total cow stock	5,984	4,879
Mastitis	9·7	11·5
Summer Mastitis	0·4	3·0
Digestive disturbances including "Winter scours"	4·3	2·6
Foul Foot	1·4	1·2
Accidents and injuries	1·8	2·5
Respiratory disease including Husk	1·0	1·2
Johne's disease (all disposed of) ...	0·9	0·8
Acetonaemia	0·6	1·2
Bloat	0·5	1·0
Genital disease (metritis, leucorrhoea)	0·5	1·2
Grass Tetany	0·4	0·5
Other sickness	1·8	2·5
Total not associated with parturition	23·3	29·2
Total number of *cases* of disease ...	2,126	2,118
Number of cows affected	1,648	1,701
Cases per 100 cows affected ...	129	125

Age Incidence

There is a marked rise in the amount of total sickness with increasing age. In Table XI total mortality and morbidity, represented by deaths, disease and accident resulting in disposals and sick animals which recover and are retained in the herds, are shown as percentages of the stock in each age-group. Served heifers (lactation 0) are included in this table to illustrate the rise in the sickness rate after first calving. The incidence then increases steadily to approximately 35 to 40 per cent. in the oldest cows.

In the remaining sections of this article the more important conditions enumerated in Table X are analysed.

Difficult Calvings

In the two years 1952–3 and 1953–4, 40 and 42 per cent. respectively of the cases were in first-calving heifers. This compares with percentages of just over 50 in the previous two years.

Table XII indicates that difficulty at parturition appears to be two and one-half times as common in heifers as in cows and that this is more marked in winter calvings than at other times of the year.

TABLE XI

PERCENTAGES OF ANIMALS DIED, DISPOSED OF ON ACCOUNT OF SICKNESS AND SICK ANIMALS RETAINED IN EACH AGE-GROUP

Lactation	1952–3 No. in each group	Deaths	Disposed of sick	Sick and retained	Total sickness
0	1,408	0·3	0·6	5·4	6·3
1	1,320	0·8	2·5	19·6	22·9
2	1,276	0·8	4·1	19·8	24·7
3	1,180	0·9	3·6	16·6	21·1
4	847	0·9	6·7	22·0	29·6
5	523	2·1	4·2	24·3	30·6
6	402	2·0	5·7	24·4	32·1
7	226	1·8	9·3	23·9	35·0
Older	300	0·7	6·3	29·0	36·0

Lactation	1953–4 No. in each group	Deaths	Disposed of sick	Sick and retained	Total sickness
0	1,156	0·1	0·7	3·0	3·8
1	1,128	0·9	4·3	23·3	28·5
2	1,038	1·1	4·1	21·0	26·2
3	781	0·6	4·6	23·7	28·9
4	744	1·3	5·5	27·2	34·0
5	467	1·9	6·4	29·6	37·9
6	354	1·7	9·0	27·7	38·4
7	215	2·8	4·2	32·6	39·6
Older	256	1·2	4·3	33·2	38·7

TABLE XII

PERCENTAGES OF DIFFICULT CALVINGS IN HEIFERS AND COWS

Season	1952–3 At first calving	Second and later calvings	Ratio	1953–4 At first calving	Second and later calvings	Ratio
October to February	3·26	1·05	3·1	3·68	0·96	3·8
March to September	1·30	0·87	1·5	1·79	1·24	1·4
Whole year	2·35	0·97	2·4	2·75	1·09	2·5
Over-all incidence		1·4			1·5	

Stillbirths

Calves born dead at gestations exceeding 270 days have been recorded as "stillborn." The picture is very similar to that presented by difficult calvings. In the two years 1952–3 and 1953–4, 39 and 37 per cent. respectively were in first-calving heifers. Stillborn calves are about twice as frequent at first parturition as in later calvings. There is also the seasonal tendency towards a higher incidence in the winter months, and this is more marked in heifers than in cows. Table XIII illustrates these points.

Abortions

All pregnancies terminated at 270 days or less from the dates of service or insemination have been classified as "abortions," and the gestation periods recorded. The over-all incidences in the two years 1952–3 and 1953–4 were 2·4 and 3·3 per cent. respectively. Corresponding figures for the years 1950–1 and 1951–2 were 3·2 and 3·0 per cent.

TABLE XIII

PERCENTAGES OF STILLBIRTHS IN HEIFERS AND COWS

Season	1952–3 At first calving	Second and later calvings	Ratio	1953–4 At first calving	Second and later calvings	Ratio
October to February	8·51	3·18	2·7	6·32	2·93	2·1
March to September	3·13	1·89	1·7	3·58	1·97	1·8
Whole year	5·98	2·59	2·3	4·96	2·52	2·0
Over-all incidence	3·3				3·1	

As stated in the previous paper, there is no doubt that a proportion of animals returning to service have actually aborted early and the majority of such cases are unrecorded.

Investigation of the causes of abortion is not possible in a survey of this kind but it is known from collateral data that few of the recorded cases are due to Brucella.

In Table XIV recorded cases of abortion are classified for successive parturitions and three gestation periods.

TABLE XIV

NUMBERS OF CASES OF ABORTION UP TO 270 DAYS' GESTATION WITH THE INCIDENCES AT EACH PARTURITION

Parturition	1952–3 To 210 days	211–240 days	241–270 days	Total cases	No. of parturitions	Incidence per cent.
1	9	3	5	17	1,320	1·29
2	25	10	11	46	1,276	3·61
3	19	7	4	30	1,180	2·54
4	8	3	3	14	847	1·65
5	10	—	—	10	523	1·91
6	7	3	1	11	402	2·74
7	9	2	—	11	226	4·87
Older	3	2	—	5	300	1·67
Totals	90	30	24	144	6,074	2·37
Per cent.	1·48	0·49	0·40	2·37	—	—

Parturition	1953–4 To 210 days	211–240 days	241–270 days	Total cases	No. of parturitions	Incidence per cent.
1	13	3	1	17	1,128	1·51
2	25	16	8	49	1,038	4·72
3	14	8	9	31	781	3·97
4	16	4	5	25	744	3·36
5	7	4	5	16	467	3·43
6	2	2	6	10	354	2·82
7	2	2	4	8	215	3·72
Older	6	3	1	10	256	3·91
Totals	85	42	39	166	4,983	3·33
Per cent.	1·70	0·85	0·78	3·33	—	—

Abortion seems to be most common at the second parturition, then to fade off and to increase in frequency again in older animals. This tendency is also indicated in data collected in other samples, but these have not yet been fully analysed. It is also hoped that as more information becomes available it may be possible to show some correlation between age and the stage of gestation at which abortion occurs.

The incidences of "abortion" to 210, 240 and 270 days respectively are shown in Table XV. If either of the first two periods is taken as the limit of abortion the balance would have to be classified as "premature calves."

TABLE XV

INCIDENCE OF "ABORTION" TO 210, 240 AND TO 270 DAYS RESPECTIVELY

	1952–3	1953–4
To 210 days	1·48	1·70
240 days	1·97	2·55
270 days	2·37	3·33

Retained Afterbirth

As found in the previous two years the incidence of retention of the placenta appears to rise with age. Table XVI shows the incidences at each parturition for the years 1952–3 and 1953–4 and for the two-year period. The combined table of incidences in over 11,000 calvings illustrates the age increase more clearly.

TABLE XVI

RETAINED PLACENTA: INCIDENCES PER CENT.

Parturition number	1952–3		1953–4		Both years	
1	1·82	1·85	1·68	1·89	1·8	1·9
2	1·88		2·12		2·0	
3	2·12	2·91	2·05	1·84	2·1	2·4
4	4·01		1·61		2·9	
5	3·63	3·24	2·57	2·19	3·1	2·7
6	2·74		1·69		2·3	
Older	2·85	2·85	5·31	5·31	4·0	4·0
Over-all incidence	2·50		2·25		2·4	

Milk Fever

As in the previous two years (1950–1 and 1951–2) the numbers of cases of milk fever recorded at first or second parturitions are negligible. From the third calving onwards the incidence again shows a striking general age increase. This is shown in Table XVII where the percentage incidences are based on the numbers of successive parturitions. The over-all incidence was appreciably greater in 1953–4 than in the previous year.

There is also a marked seasonal effect with much higher incidences in cows calving during the months May to October than at other times of the year. In 1952–3 the peak occurs in the period May to July, whereas in 1953–4 (with a higher over-all incidence) it is delayed until August-October. Table XVIII showing the incidences at four seasons for the third to fifth calvings and for older cows respectively, indicates the seasonal and age differences. The incidence of the condition among older cows calving during the summer was approximately 12 per cent.

TABLE XVII

INCIDENCES OF MILK FEVER AT SUCCESSIVE PARTURITIONS

Parturition number	1952–3 Total calvings: 6074		1953–4 Total calvings: 4983	
	No. of cases	Incidence	No. of cases	Incidence
1	1	0·08	0	0·00
2	2	0·16	2	0·19
3	15	1·27	10	1·28
4	21	2·48	48	6·45
5	44	8·41	39	8·35
6	27	6·72	38	10·73
7	21	9·29	20	9·30
8 and over	23	7·67	29	11·33
Total	154	2·54	186	3·73

TABLE XVIII

INCIDENCE OF MILK FEVER BY AGE AND SEASON

Season of calving	1952–3 Parturition No.		1953–4 Parturition No.	
	3–5	6 and over	3–5	6 and over
November to January	1·17	3·36	4·55	9·56
February to April	1·91	6·36	2·27	7·66
May to July	5·13	11.39	5·67	11·48
August to October	4·62	9·06	6·23	12·35
Unweighted means	3·21	7·54	4·68	10·26

Mastitis

Wilson (1954) has maintained that if the incidence of clinical mastitis has not increased in recent years, there has certainly been no diminution, and the information recorded in this survey of herds in Surrey, Berkshire and Wiltshire amply supports this opinion. The case incidences in 1950–1 and 1951–2 reported in the previous article were 8·1 and 7·1 per cent. In the following two years now under review the incidences are 9·8 and 11·5 per cent. respectively. Some general data on incidence, proportion of herds affected and herd-size are given in Table XIX.

Approximately two-thirds of the herds surveyed recorded cases of clinical mastitis and these herds contained about three-quarters of the total cows. The tendency previously noted for the disease to be more prevalent in the larger herds is confirmed. The same general picture is seen in both years despite the falling out of the survey in 1953–4 of herds from all three counties and their replacement by new herds in Wiltshire only. .

A marked increase in susceptibility with age is again apparent. Compared with the previous two years there appears to be a rise of incidence in the earlier lactations and a relative reduction in the older animals.

TABLE XIX

MASTITIS : GENERAL DATA

	1952–53	1953–4
Number of herds surveyed ...	170	132
Total cow stock	5,984	4,879
Number of cases of mastitis ...	584	562
Case incidence per cent. ...	9·8	11·5
Number of cows affected ...	515	483
Individual incidence per cent. ...	8·6	9·9
Cases per affected cow	1·1	1·2
Number of affected herds ...	113	95
Cow stock of affected herds ...	4,315	3,724
Percentage of herds affected ...	66·5	72·0
Percentage of total cows in affected herds	72·1	76·3
Case incidence in affected herds only	13·5	15·1
Mean sizes of herds (No. of cows)		
Affected herds	38·2	39·2
Herds not affected	29·3	31·2
All herds surveyed	35·2	37·0

Table XX gives the percentage incidences in the different lactations.

TABLE XX

INCIDENCE OF MASTITIS AT DIFFERENT AGES

Lactation No.	1952–3	1953–4
1	5·5	6·5
2	8·1	6·5
3	6·7	9·6
4	10·7	10·6
5	10·1	13·7
6	10·7	12·4
Older	13·7	17·2

Again, approximately one-third of the cows affected with mastitis have their first attack within one month of parturition and in the majority of cases from a few days to a week after calving. There is then a gradual fall in incidence to the end of lactation and an increase when drying off or dry. This is illustrated in Table XXI.

There is still only very slight evidence of any seasonal influence on the incidence of mastitis. The prevalence of the disease in late autumn and winter may be related mainly to the pattern of calvings, but unfavourable weather is almost certainly a factor which will be capable of further analysis when more information from wider areas is available.

Summer Mastitis

In the years 1950–1 to 1952–3 inclusive the recorded incidences of summer mastitis in the Surrey, Berkshire and Wiltshire herds surveyed were 0·2, 0·5 and 0·4 per cent. respectively. It may be assumed that the probable incidence of this condition in these counties does not normally exceed 0·5 per cent.

In the summer of 1954 there was a serious outbreak of the disease and in the samples of herds surveyed 169 cases affecting 167 animals were recorded compared

TABLE XXI

MASTITIS : TIME OF FIRST ATTACK WITH RELATION TO CALVING

Time of first attack	1952–3 Cows affected		1953–4 Cows affected	
	No.	Per cent.	No.	Per cent.
Within 1 month of calving	181	35·1	147	30·4
During the 2nd month	60	11·7	61	12·6
„ „ 3rd „	50	9·7	43	8·9
„ „ 4th „	44	8·5	38	7·9
„ „ 5th „	32	6·2	38	7·9
„ „ 6th „	24	4·7	27	5·6
„ „ 7th „	37	7·2	19	3·9
„ „ 8th „	21	4·1	14	2·9
„ „ 9th „	13	2·5	16	3·3
„ „ 10th „	12	2·3	11	2·3
When drying off or dry	33	6·4	59	12·2
Not known	8	1·6	10	2·1
Totals	515	100·0	483	100·0

with 7, 26 and 22 cases respectively in the previous three years. This has afforded the opportunity to carry out detailed analysis of the condition which was not possible in earlier years. A little less than half the herds surveyed reported cases of summer mastitis and as with lactation mastitis the larger herds appeared to be more prone to the disease, as shown in Table XXII.

TABLE XXII

SUMMER MASTITIS : HERDS AFFECTED AND SIZES 1953–4

Number of herds surveyed	132
Number of herds with cases of summer mastitis	60
Percentage of total herds affected	45·5
Mean sizes of herds (No. of cows)	
Affected herds	44·8
Herds not affected	30·5
All herds surveyed	37·0

Of the cases recorded (169), 148 were in cows and 21 among uncalved heifers. Table XXIII shows the incidences in animals of different ages.

The condition appears to affect dry cows regardless of age.

The 1954 outbreak started late in July, reached its peak in August and died out in September. The summer of 1954 was notably cool and dull and very

TABLE XXIII

SUMMER MASTITIS : INCIDENCES IN THE SUCCESSIVE AGE-GROUPS. 1953–4

Age-group	Number of animals in each group	Number of animals with summer mastitis	Incidence per cent.
Served heifers	1,156	21	1·8
Cows :			
Lactation 1	1,128	37	3·3
2	1,038	29	2·8
3	781	23	2·9
4	744	21	2·8
5	467	15	3·2
6	354	9	2·5
Older cows	471	12	2·5

wet in most areas of the country. Of the summer mastitis recorded all the cases in served heifers (21) and 141 of the 148 cases in cows occurred in the three months July to September.

This is the period when a large number of cows are dry before autumn calving. Table XXIV gives the numbers of cases and the incidences in these months in dry cows.

TABLE XXIV

INCIDENCE OF SUMMER MASTITIS, JULY TO SEPTEMBER 1954 IN DRY COWS

Month : 1954	No. of cows recorded as dry	Cases of summer mastitis	Incidence in dry cows per cent.
July	370	31	8·4
August	616	84	13·6
September ...	853	26	3·0

Of 146 cows affected with summer mastitis five died, a mortality rate of 3·4 per cent. None of the cases in heifers was fatal.

The prevalence of this disease provided an opportunity for study at Weybridge of the part played by various species of flies. The most frequent and regular visitors on the udders and teats were species of *Hydrotaea*, and *C. pyogenes* was readily recovered from many *Hydrotaea* and *Stomoxys*. In a few cases a Group C *Streptococcus* resembling the organism of summer mastitis was found in *H. irritans*. The end of the period of activity of *Hydrotaea* coincided with the end of the summer mastitis season.

Digestive Disturbance Including Winter Scours

There were more cases of both ordinary digestive trouble and winter scours in 1952–3 than in the following year, the *over-all* incidences being 4·3 (digestive 2·0 and winter scours 2·3), and 2·6 (digestive 1·5 and winter scours 1·1) per cent. in the two years respectively.

Ordinary digestive ailments were recorded in 35 per cent. of the herds surveyed in 1952–3 and in 26 per cent. of the herds in 1953–4, the incidence in the affected herds only being approximately 5 per cent. in each year.

Winter scours is quite clearly an infectious diarrhoea and the picture is different. Comparatively few herds are affected, roughly 6 per cent. of the herds surveyed in each year. In the majority of these herds only a few animals were sick, but in about one-third of them in each year all, or practically all, the cows were affected by epidemic scouring which ran through the herds in the course of a week or so and caused considerable reduction in the milk yield. All the affected animals recovered. The incidence of the condition in the affected herds was 26·9 per cent. in 1952–3 and 15·3 per cent. in 1953–4, but it reached 100 per cent. in a few herds. Of the herds surveyed only five recorded cases of winter scours in both years. In four of these there were only a few cases, but in one herd nearly all the cows were affected in 1952–3 and about half of them in the following year.

Table XXV summarises the information on these conditions.

TABLE XXV

DIGESTIVE DISTURBANCE AND WINTER SCOURS

Condition	1952–3 Total herds : 170		
	Herds with cases and per cent. of total	Number of cases	Incidence in these herds
Digestive disturbances	60 (35%)	122	5·3
Winter scours	11 (6·5%)	134	26·9

Condition	1953–4 Total herds : 132		
	Herds with cases and per cent. of total	Number of cases	Incidence in these herds
Digestive disturbances	34 (26%)	74	5·1
Winter scours	8 (6·1%)	55	15·3

Foul Foot

This condition calls for no special comment. The over-all incidences are similar in both years, *viz.*, 1·4 and 1·2 per cent. respectively. Of the total herds surveyed, 23·5 per cent. in 1952–3 and 26·5 per cent. in the following year, recorded cases. The average incidences in affected herds were therefore approximately 5 to 6 per cent. The maximum numbers of cases in any one herd were eight in 1952–3 and five in 1953–4.

Accidents and Injuries

Accidental injuries were recorded by 39 and 42 per cent. respectively of the herds surveyed in the two years under review. The over-all incidences of 1·8 and 2·5 per cent. respectively therefore indicate incidences of approximately 4·6 and 6·0 per cent. in affected herds only. Just over half the recorded cases were due to injuries to the udder and teats.

Respiratory Disease Including Husk

Husk in adult cattle accounted for two-thirds and just under one-half of the total respiratory disease recorded in 1952–3 and 1953–4 respectively, but these cases occurred in only two or three herds compared with 16 and 20 herds which recorded cases of " other respiratory disease."

During the four-year period so far covered by these surveys, husk was most prevalent in 1951–2 as indicated in Table XXVI.

Johne's Disease

The recorded over-all incidences of Johne's disease have varied very little during the four-year period 1950–1 to 1953–4 inclusive, the figures being 1·0, 0·8, 0·9 and 0·8 per cent. respectively.

Fifteen to 22 per cent. of the herds in the samples have recorded cases.

TABLE XXVI

OVER-ALL PERCENTAGE INCIDENCE OF RESPIRATORY DISEASE IN COWS

	1950–1	1951–2	1952–3	1953–4
Husk	0·46	2·03	0·65	0·54
Other respiratory disease ...	0·14	0·77	0·35	0·66
Totals ...	0·60	2·80	1·00	1·20

There is still insufficient information available to justify detailed analysis, but there is some indication that the incidence of the disease decreases after the fourth calving.

All recorded cases were disposed of for slaughter.

Acetonaemia, Bloat and Grass Tetany

Table XXVII shows the over-all incidences of these conditions for the two years under review and the proportions of herds in the samples which recorded cases.

TABLE XXVII

		Over-all incidence per cent.	Percentage of herds affected
Acetonaemia			
	1952–3	0·6	13
	1953–4	1·2	21
Bloat			
	1952–3	0·5	9
	1953–4	1·0	17
Grass Tetany			
	1952–3	0·4	9
	1953–4	0·5	13

The incidences of acetonaemia and bloat appear to have increased considerably in 1953–4 compared with previous years, but the number of cases is still insufficient for detailed analysis.

As in the previous two years only a small proportion of herds in the samples recorded cases of these conditions, and the incidences in some affected herds may reach quite a high figure.

Other Sickness

"Other sickness" comprises a variety of conditions which are not specifically recorded under the disease headings already dealt with. The incidences in the two years under report were 1·8 and 2·5 per cent. respectively of total cow stock.

Teat affections and lameness (other than foul foot) accounted for 36 to 41 per cent. of the cases recorded under this heading. Table XXVIII shows the breakdown of "Other Sickness."

TABLE XXVIII

OTHER SICKNESS : PERCENTAGES OF TOTAL CASES	1952–3	1953–4
Teat affections	24·5	18·3
Lameness other than foul foot ...	11·8	22·5
Cow pox	19·1	—
Wooden tongue	9·1	5·0
Miscellaneous	35·5	54·2
	100·0	100·0

Served Heifers : Deaths, Disposals and Sickness

It is more difficult to induce farmers and stockmen to record fully casualties in younger stock than in animals that have calved and entered the dairy herd. An attempt has been made in the two years under review to record deaths, disposals and sickness in served heifers in these samples of herds, but the figures are probably less complete than those relating to mature stock.

Table XXIX gives this information under the various disposal and disease categories. The figures are percentages of the total average stock of served heifers.

TABLE XXIX

SERVED HEIFERS : PERCENTAGE INCIDENCE OF DEATHS, DISPOSALS AND SICKNESS

		1952–3	1953–4
Total average stock		1,408	1,156
Deaths		0·3	0·1
Disposals :	Infertility	1·5	2·4
	Sickness	0·6	0·7
	Reactors	0·1	2·5
	Surplus	2·7	2·9
Total deaths and disposals ...		5·2	8·6
Sickness :	Husk	3·5	—
	Ringworm	1·2	1·1
	Digestive including worm infestation	0·9	0·2
	Foul foot	—	0·1
	Johne's disease ...	0·1	0·1
	Summer mastitis	0·1	1·8
	Accidents	0·1	0·3
	Miscellaneous ...	0·4	0·3
Total sickness		6·3	3·9

This table shows the mortality and morbidity up to, but excluding, first calving or abortion, which have already been considered in the appropriate sections (see Tables XII, XIII, XIV, XVI and XVII).

As indicated in Tables VIII and XI, deaths, disposals and sickness incidence in served heifers prior to first parturition are very low compared with animals which have entered the dairy herd.

Disposals of reactors in 1953–4 showed a marked increase over the previous year which, as in cows, reflected the progress of attestation.

In 1952–3 there were 49 cases of husk (3·5 per cent.) among in-calf heifers, but in the following year no cases were recorded. The incidence in adult stock was very similar in both years (Table XXVI).

The severe outbreak of summer mastitis in 1954 is indicated by the incidence of 1·8 per cent. in served heifers compared with 0·1 per cent. in the previous year (1952–3). This has already been referred to in the section on summer mastitis and in Table XXIII.

Acknowledgments.—Mr. F. B. Leech, Department of Statistics, Rothamsted Experimental Station, has kindly undertaken the analysis of the data collected in these surveys for several years past and I gratefully acknowledge his help and advice. I also wish to thank Miss M. G. Hills, of the same institute, for compiling several of the Tables contained in this article.

References

WILSON, C. D. (1954). *Vet. Rec.* **66.** 775.
WITHERS, F. W. (1955). *Ibid.* **67.** 605.

Corneal Graft in a Dog

BY

J. R. HOLT

Chorley

Subject. Twelve-month-old male Pekinese, showing microphthalmus in the left eye which was blind, and melanosis of the cornea in the right eye due to distichiasis.

As the owner was considering euthanasia if nothing could be done, corneal grafting was suggested.

Instruments. Normal instruments for entropion.

Corneal graft trephines (Francheschetti 5.0 mm. and 5.1 mm.).

Francheschetti's lens guard.

Giradets corneal shovel.

Castroviejo curved corneal scissors.

De Wecker's corneal scissors.

Self-retaining lid retractor.

Needle holder.

Fine (2:1) corneal forceps.

One double and two single conjunctival hooks.

One Barraquer half-circle corneal needle.

One No. 6 eye curved needle.

Quantity of fil á cornée de Kalt and No. 1 black silk sutures.

Technique. The patient was anaesthetised with pentobarbitone sodium and a normal entropion operation was performed on both lids.

The eye was then prepared for operation by flushing out the conjunctival sacs with sterile saline, and the operation site was covered with sterile cloths.

The lids were drawn back by means of a self-retaining lid retractor.

The donor dog was then destroyed using pentobarbitone sodium and one of the eyes removed under sterile precautions.

Holding the donor eye in the left hand a circular portion of the cornea was cut out by rotary motion with the (5.0 mm.) trephine until the cornea was penetrated, the final separation being completed with the Castroviejo scissors. The graft was then transferred to the corneal shovel ready for delivery to the recipient eye.

The recipient cornea was trephined using the 5.1 mm. trephine until aqueous humour started to escape. Removal of the disc was completed by inserting the lens guard through the opening made and cutting out the disc with Castroviejo scissors.

Two sutures of fil á cornée on the Barraquer needle were inserted through the edge of the graft at 180°. The graft was placed into the recipient eye, the sutures being passed through the recipient cornea and tied.

The lid retractor was removed at this stage.

Should any of the iris protrude or attach to the graft it can be replaced with the iris repositors.

The graft was dressed with atropine, hydrocortisone, and neomycin.

For protection, the conjunctiva lining the upper lid was dissected away from the eye with De Wecker's scissors starting at the limbus and continuing almost to the lid margin (conjunctival keratoplasty) and was drawn down over the cornea and sutured to the conjunctiva of the lower lid with No. 1 black silk on No. 6 eye needle.

The lids were sutured together using mattress sutures of No. 1 black silk which passed through the thickness of the lid without penetrating.

The eye was left for four days when the stitches were removed from the lids and conjunctiva. The graft at this time was perfectly clean and healthy and was dressed with sulphacetamide and amethocaine ophthalmic ointment. Dressing was repeated twice daily.

Two days later the graft was observed to be going cloudy and in spite of vigorous treatment with neomycin and hydrocortisone became opaque. The corneal sutures were removed at this time.

Fortunately the owner decided to persist with treatment and the graft has become gradually clearer with the return of some sight.

Comment. The unfortunate clouding of the graft is believed to be due to mechanical interference by the dog before the graft had settled down completely and could probably have been avoided if all the sutures had been left in for at least a week.

Acknowledgments.—My thanks are due to Messrs. W. Gimber & Sons, who took a great deal of trouble to obtain the necessary instruments and suture material.

References

PHILPS, S. (1950). "Ophthalmic Operations." Baillière, Tindall & Cox, London. 161.

SMYTHE, R. H. (1956). "Veterinary Ophthalmology." Baillière, Tindall & Cox, London. 268.

IRISH VETERINARIAN CALLED TO AMERICA

It has been reported that Tulyar, the race-horse sold by the Irish National Stud to the Clairborne Stud in Kentucky for £240,000, is seriously ill. In an attempt to save the horse the American owners appealed to an Irish veterinary surgeon, Mr. M. Cosgrave of Co. Kildare, to fly to the United States and act as consultant. Mr. Cosgrave left Shannon airport earlier this week. It is said that his fellow consultant will be a doctor from the famous Mayo Clinic.

Operation for Corneal Dermoid in the Dog

BY
C. F. B. HOFMEYR
Pretoria, South Africa

JUDGING from the references to the treatment of corneal dermoid in the dog, there is a conflict of opinion with regard to the operative technique, and certain aspects of the operation are not mentioned.

Frick (1923) advises dissection of the dermoid with scissors, from the middle of the eye outwards, under local anaesthesia. McCunn (1939) favours a similar technique and anaesthesia, but warns against excessive haemorrhage and the risk of rupturing the cornea. Brumley (1923) advises both a general and a local anaesthetic; the same general technique is employed as recommended by the authors above, and the surgeon is cautioned against causing serious injury to the eyeball. Kirk (1951) stresses the importance of full general anaesthesia as a safeguard against puncture of the cornea. He recommends the dissection method already mentioned and regards adrenalin as useful in the control of bleeding. Hine (1951) makes only a very brief mention of dermoid in the human eye. Smythe (1956), in a valuable contribution to veterinary ophthalmology, states that the operation must be carried out under deep pentobarbitone sodium* anaesthesia, and he finds that the operation is not always successful. The part of the dermoid attached to the conjunctiva is easily removed, but that adherent to the cornea can only be excavated with great difficulty and consequent risk. He urges the shaving away of consecutive layers in some cases, whilst in others he favours the pulling out of hair and the employment of electro-cautery to destroy the roots.

The present author has employed a technique which has been uniformly successful, and which is dissimilar to that used by any of the above-mentioned authorities.

Anatomy

Firstly, some points regarding the relevant anatomy should be considered. The epithelial covering of the dermoid is continuous with that of the conjunctiva and cornea, but there is a clear line of demarcation between the metaplastic and the normal tisse. The part of the dermoid which is on the cornea is surrounded by a narrow band of pigment (0.5 mm. or less), and this zone forms the transition between the epithelium of the dermoid and that of the cornea. The blood vessels are all derived from the conjunctiva. When the dermoid intrudes on the conjunctival area, the attachment to the underlying sclera is fairly loose; that to the cornea is very firm, but in this area the only layer of the cornea which is replaced by the dermoid is the epithelium.

Ellenberger & Baum (1915) show that the thickness of the cornea varies according to the size of the dog. The middle may measure 0.6 to 1.0 mm., and the limbus 0.5 to 0.7 mm. Steindorff (1947) gives the thickness of the corneal epithelium as 0.08 to 0.085 mm.

* Nembutal. Abbott Laboratories, Ltd.

The Operation

The operation should not be attempted by any surgeon whose hands are not absolutely steady, and the patient must be kept under deep general anaesthesia. A Bard-Parker handle with a number 15 blade is used, and the layer of pigment around the corneal border is scraped off, using a side-to-side movement, with the excursions of the knife being no more than the width of the pigment. Whenever the knife is brought into contact with any part of the cornea it is advisable for the surgeon to hold his breath to facilitate exactness of movement. The scraping should be continued until all sign of the pigment has gone, *but it should be carried no deeper*. Because the epithelium is so very thin, great delicacy is required. The pigment cells occupy the deepest layers of the epithelium so that the removal of all the colour in this zone indicates that one is on a level with the deep aspect of the dermoid.

Attention is now directed to the conjunctival border of the dermoid. It is lifted by means of fine forceps, and an incision is made separating the dermoid from the conjunctiva. If haemorrhage is troublesome, capillary oozing is stopped by the application of adrenalin-soaked cotton pledgets, electro-cautery being used on the larger vessels. The edge of the dermoid is then turned up and is dissected from the sclera, great care being taken to work against the underside of the dermoid. If this is done with great care it will be found that, as soon as the dissection reaches the corneo-scleral junction, one is operating along a line of natural cleavage, *i.e.* along Bowman's membrane, and in this manner the dermoid is separated from the cornea. It will also be found that as a result of scraping the zone around the dermoid, there is no danger of tearing the corneal epithelium while lifting the dermoid.

After the removal of the dermoid a raw area is left, partly on the cornea and partly on the sclera. Healing will take place by epithelization from the edges of the wound; as is well known, conjunctival repair takes place remarkably quickly, but that of the cornea is slow. The result is that, if the raw surfaces on either side of the limbus are of equal size, the defect in the conjunctiva will be healed a long time before the corneal area is repaired, and the conjunctival epithelium will invade the corneal area, possibly causing a disfiguring opacity. This development is prevented by enlarging the raw area over the sclera and by dissecting some conjunctiva away along the limbus on either side of the wound, remov-

ing a circular piece of conjunctiva about 1 cm. or more in diameter. This gives the corneal epithelium more time to cover the defect on the cornea. Usually there is some pigment at the limbus and a wound in the area may give rise to a spread of the pigmentation towards the fornix; this, however, does not have an adverse effect on the appearance.

Post-operative hospitalisation is desirable. The only treatment required is the instillation several times a day of an ointment containing one of the newer antibiotics combined with a cortisone derivative suitable for topical use. No complications have been experienced.

Summary

A brief review is given of some views concerning the operative treatment of corneal dermoid in the dog.

A detailed description is given of a new and successful operative technique carried out by the author.

Acknowledgment.—The author is indebted to Professor H. P. A. de Boom, Department of Anatomy, Faculty of Veterinary Science of Pretoria University, Onderstepoort, for taking measurements of, and finding in the literature references to, the thickness of various corneal layers.

References

BRUMLEY, O. V. (1943). "Diseases of the Small Domestic Animals." Baillière, Tindall & Cox, London. 348 pp.

ELLENBERGER, W., & BAUM, H. (1915). "Handbuch der Vergleichende Anatomie der Haustiere." August Hirschwald, Berlin. 929 pp.

FRICK, H. (1923). "Tierärtzliche Operationslehre." Verlagbuchhandlung von Richard Schutz, Berlin. 191 pp.

HINE, M. L. (1951). "May and Worth's Manual of Diseases of the Eye." Baillière, Tindall & Cox, London. 146 pp.

KIRK, H. (1951). "Index of Treatment in Small Animal Practice." Baillière, Tindall & Cox, London. 302 pp.

MCCUNN, J. (1939). "Hobday's Surgical Diseases of the Dog and Cat." Baillière, Tindall & Cox, London. 111 pp.

SMYTHE, R. H. (1956.) "Veterinary Ophthalmology." Baillière, Tindall & Cox, London. 237 pp.

STEINDORFF, K. (1947). *Tabulae Biologicae.* **22.** Part I. 208.

FOWL PEST

In reply to a Parliamentary Question, the Minister of Agriculture has stated that he and the Secretary of State for Scotland have decided to end the policy under which live poultry other than day-old chicks and hatching eggs may not be moved into certain scheduled areas in England and Wales from any other part of Great Britain. Representatives of the main poultry producers' organisations were consulted before this decision was taken. The necessary Order will be made as soon as possible. The ban on the movement of poultry, day-old chicks, and hatching eggs into Scotland from any other part of Great Britain will remain. The policy of slaughtering infected birds and those regarded as dangerous contacts will also be maintained.

In Brief

TOXICOLOGY OF CADMIUM

There is likely to be a revival of interest in the toxicology of cadmium should the use of cadmium oxide (Bunde, Blair, Burch & Lee, 1954) and cadmium anthranilate (Guthrie, 1954) as ascaricides in pigs become general. Hitherto cases of poisoning in animals have occurred almost exclusively from the solution of cadmium into food prepared in plated vessels.

The pharmacology of cadmium has recently been discussed by Jones (1956). The element, which is one of the more toxic metals, is readily absorbed from the gut and is firmly fixed by the tissues, highest concentrations being found in the kidneys, spleen, and liver (Forney, Bunde & Burch, 1955). As an anthelmintic, the oxide is mixed with the wet or dry food in a concentration of 150 p.p.m. and fed for three days. Twice this concentration was found to reduce the food intake and to cause diarrhoea and vomiting. Acute poisoning is considered unlikely to occur since large amounts (of the order of 5 per cent.) bring about prompt emesis with no further symptoms. Experimental chronic poisoning induced in the rat by feeding 62 p.p.m. of cadmium as its chloride is characterised by rapid bleaching of the incisor teeth and by the development of severe anaemia, cardiac hypertrophy, and hyperplasia of the bone marrow (Wilson, De Eds & Cox, 1941). The metal is generally believed to exert its toxic effect through inhibition of sulph-hydryl enzymes, but Parízek & Záhor (1956), who found repeated subcutaneous injection of 1 ml. of 0.03 M aqueous cadmium chloride or lactate to lead to rapid destruction of all testicular tissues in rats, suggest that there may be competitive inhibition between cadmium and zinc, since a nutritional deficiency of zinc produces similar lesions.

There is an obvious danger to humans from the consumption of pork from cadmium-treated animals. That this is recognised in the U.S.A. is shown by the ruling of the Food and Drug Administration that approval of cadmium as an ascaricide in pigs is contingent upon the understanding that it should be used only once during the life of an animal fed for marketing.

R. T. GARNER (October, 1956).

References

BUNDE, C. A., BLAIR, H. E., BURCH, G. R., & LEE, J. W. (1954). *Proc. Soc. exp. Biol. (N.Y.).* **87.** 549.

FORNEY, R. B., BUNDE, C. A., & BURCH, G. R. (1955). *Ibid.* **90.** 13.

GUTHRIE, J. E. (1954). *Vet. Med.* **49.** 413; 500.

JONES, L. M. (1956). *Cornell Vet.* **46.** 382.

PARÍZEK, J., & ZÁHOR, Z. (1956). *Nature, Lond.* **177.** 1,036.

WILSON, R. H., DE EDS, F., & COX, A. J., Jun. (1941). *J. Pharmacol.* **71.** 222.

Current Literature

REPORT

Agricultural Improvement Council for England and Wales. Third Report, 1950-6. (London: H.M.S.O. 2s. 6d.)

This, the Third Report of the Agricultural Improvement Council, should be read in the light of the Council's terms of reference which are "To keep under review the progress of research with a view to ensuring that promising results are applied as rapidly as possible to the problems of agriculture and horticulture and that these and any other new technical methods are incorporated into ordinary commercial practice; to advise from time to time concerning agricultural and horticultural problems which appear to require scientific investigation; and to advise generally as to the lines on which a policy designed to raise the technical standard of agricultural and horticultural production can best be implemented." These objectives are fulfilled firstly by keeping in touch with research and investigation undertaken by the Agricultural Research Council, the Universities and Colleges, and the National Agricultural Advisory Service, including the latter's Experimental Husbandry Farms, and secondly, by seeing that the information so gathered is disseminated to farmers through the N.A.A.S., agricultural Press, and other popular vehicles.

Although the A.I.C. has no statutory responsibility for performing research it has experimental work going on under its guidance at N.A.A.S. Experimental Husbandry Farms. The projects involving livestock are those of animal husbandry. These projects are briefly outlined in Part II of the Report.

Part III consists of summaries of the problems considered by the Council. Among those of veterinary interest are fluorine poisoning, foot-and-mouth disease, deep frozen cattle semen, metabolic disturbance in ruminants, the feeding of sheep dogs, meat research, and artificial insemination in pigs.

This report is an adequate over-all account of the A.I.C. activities, but it is not intended to, nor does it, provide any detailed technical information which cannot be obtained in the scientific Press and technical reports of other bodies.

(The veterinary representative on the A.I.C. is Professor E. G. White, who succeeded the late Professor Blakemore.)

BOOK REVIEW

The Chemistry of Living Cells. By HELEN R. DOWNES (1955). pp. 549. Numerous tables and illustrations. Harper & Bros., New York; Longmans, Green & Co., London. 45s.

Subject to the few, relatively unimportant reservations mentioned in the following paragraphs, this introductory text-book may be recommended both as a clear, lucid specimen of writing, and as a handsome sample of book production, well printed on good paper, with a multiplicity of distinct figures and chemical formulae. So far as the veterinary world is concerned the book is perhaps especially suited to students and to those who qualified some years ago and now wish to refresh their memories about, or to extend their knowledge of, biochemistry.

In recommending a text-book to students it is fitting to take into account the present status of biochemistry, which may be said to have "come of age" some little time before the last war. This branch of science served a long apprenticeship to medicine, having since the latter part of the 19th century done its fair share of the chores, chiefly in connexion with the examination of blood and of the less aesthetic, excretory products of man and the common mammals. But in general it could not, during its earlier years, claim to play so useful a part as did studies of the anatomy and micro-anatomy of living tissues. Changes of form, whether observed directly with the naked eye or whether seen by the aid of the microscope, impress themselves relatively simply upon the senses, but the chemical changes which are the invisible accompaniment of the morphological transformations characteristic of living organisms are more subtle. The one aspect of life, however, is just as important as the other, so that no one claiming to be a complete biologist, as every veterinary surgeon must, can afford to ignore either. At times one or the other discipline may prove to be the more useful tool in the study of disease, but in any particular case the choice is unlikely to be fixed but may well depend upon the relative advances of biochemistry and histology as time progresses.

If biochemistry, as a study of function, is to be taught simultaneously with the study of structure, its limits for undergraduate teaching need to be defined. The past difficulties of some universities in settling whether biochemistry should be taught in the undergraduate or post-graduate years indicate the different viewpoints which may be held. Professor Downes shows clearly that she believes that biochemistry can be taught satisfactorily to students with no more than general backgrounds of biology and of chemistry. With this opinion the reviewer agrees for, if no physics are to be taught until the student has graduated in mathematics, and if his training in chemistry is to await his graduation in physics, then the pupil is unlikely to reach some aspects of biochemistry until he is middle-aged. The emergence of text-books on subjects such as physical biochemistry points simply to the great strides being made in certain parts of biochemistry: it does not mean that those advances should necessarily loom largely in the undergraduate syllabus.

Having adopted this viewpoint, Professor Downes uses the space she thus gains to develop her subject historically, a method far kinder to the beginner. As an illustration of her approach we may take her treatment of the Krebs cycle, one of the peaks of modern biochemistry. If, as sometimes happens, the Krebs cycle is printed baldly in the form of a few curved arrows and chemical formulae, arranged clockwise without adequate textual explanation of this form of shorthand, it then resembles nothing more than some damnable treadmill destined to deprive

the student of zest, patience, and reason. Such a method of exposition disgraces both teaching and the worker whose labour and ingenuity led to the final elucidation of the metabolic cycle. It is to the credit of the present book that it seldom leaves the student wondering how the ultimate conclusions were reached: the steps by which modern ideas have evolved are made clear.

Professor Downes's first chapter is very largely a historical one, whilst the next two deal with the simple physical properties of aqueous solutions and with the structure of living forms, this first section taking up some 80 pages. Part II (190 pp.) describes the chemical reactions of carbohydrates, proteins, lipids, and enzymes. Much the longest section of the book (280 pp.) deals with intermediary metabolism, beginning with a clear account of the experimental methods which are available for such studies. In the next chapter transportation systems in animals and plants are described, and there follows a chapter on digestion and absorption. Afterwards come chapters dealing with the metabolism of proteins, lipids, and carbohydrates, and the book concludes with accounts of biological oxidations and of biosynthetic mechanisms. There is a good index of 15 pages, but no author index. Any matter which can benefit by graphic demonstration appears to be so treated.

The price usually paid for general lucidity is an occasional lapse into vague inaccuracy. Thus the statement about the effect of temperature on the solubility of gases in water (p. 15) is not accurate as it stands, and the title of Table 6—III, is not strictly correct. Hevesy has more claim to be regarded as the originator of isotopic tracer techniques than Urey (p. 281), whilst the statement that it was not until the early years of the *present* century that the importance of dietary proteins was recognised must surely be a slip (p. 345). The major fault, from the veterinary point of view, is the tendency to think of mammalian biochemistry too largely in terms of man and related animals: the ruminant needs more extensive treatment.

However, these are compartively trivial faults which will probably be put right in a second edition. Not the least attractive feature of the book is the biographical footnotes which are provided and, the quotations which precede the chapters. (Professor Robison unfortunately is no longer with us [p. 114].) Each chapter ends with a selected list of references for further reading and with a number of study questions for the student to tackle. If there is a better introductory text-book of biochemistry, with a sounder balance between biology and chemistry than this, the reviewer has not met it. The price, by 1957 standards, is very reasonable.

ABSTRACTS

Food Poisoning in England and Wales, 1955. Report (P.H.L.S.), 1956. *Mon. Bull. Min. Hlth. Lab. Serv.* **15.** 263-74.

During 1955, 8,961 incidents of food poisoning were recorded—an increase of 49 per cent. over 1954. The greater part of this increase was in Salmonella infections, particularly *Salmonella typhi-murium* infection. The latter was responsible for 76 per cent. of the incidents in which the cause was ascertained and for 25 of the 39 fatal cases. A further 19 per cent. and nine fatal cases were due to other Salmonella organisms. The next most common agents, Staphylococci and *Cl. welchii*, were responsible for only 3 and 2 per cent. of the incidents due to known causes. Two non-fatal cases of botulism, due to *Cl. botulinum* type A, were recorded. Both were caused by pickled fish prepared abroad.

As in previous years, processed and made-up meat dishes were the most common cause of food poisoning, being incriminated in 228 of the 312 outbreaks in which the vehicle of infection was known. Only four outbreaks were attributed to eggs, and two to fresh milk. In the latter the infection appeared to originate not from the cow but from persons handling the milk.

A Survey of Tumours Occurring in Cattle, Sheep and Pigs. MONLUX, A. W. *et al.* (1956). *Amer. J. Vet. Res.* **17.** 646-77.

The authors made a two-year survey of tumours in cattle, sheep, and pigs slaughtered in Denver. A total of 1,002 tumours was collected, these comprised 908 of bovine origin, 66 were from sheep, and 28 from pigs.

By far the most frequent neoplasm of cattle was the squamous cell carcinoma. This lesion was diagnosed in 471 of a total of 722 eye tumours. The remaining eye tumours were diagnosed as "early squamous cell carcinoma, epidermal plaques, or epidermal papillomas." The second most important bovine neoplasm was the Schwann cell tumour (43 cases). This tumour appeared to be relatively benign. The high incidence of the Schwann cell tumour caused speculation as to whether the neoplasm had been overlooked in the past. There is a suggestion that this tumour is increasing in frequency in the U.S.A. Adrenal cortical tumours (23) and lymphoid tumours (20) came next in frequency. Adreno-carcinomata of the uterus (13) and lympho-sarcomata (20) were considered to be tumours of economic importance. Tumours of the adrenal medulla were present in five cases, these comprised three neuroblastoma and two pheochromocytoma. Liver cell tumours, granulosa cell tumours of the ovary, and epithelial lung tumours were not as frequent as had been anticipated.

Neoplastic diseases in slaughtered sheep and pigs are much less important than in cattle. Lympho-sarcomata would appear to be the important economic tumour in both species. In 66 ovine tumours there were 20 lymphoid tumours, nine adrenal medulla neoplasms, and five adrenal cortical ones. The adrenal medullary ones were very similar and were all pheochromocytoma.

The embryonal nephroma was the most frequently diagnosed porcine tumour (13 cases). None of these tumours had metastases. Nine lympho-sarcomata were present in the series.

A. R. J.

News and Comment

THE WILLIAM HUNTING AWARDS

Readers will recall the announcement, at the beginning of last year, of these awards for the best clinical papers to be published in THE VETERINARY RECORD during 1956 and subsequent years. The awards, which are divided under two classes, comprise a silver medal and a cheque for £25 as first prize, and a bronze medal or medals for runners-up.

At its meeting in Edinburgh on April 12th, the Council of the B.V.A. approved the following Minute arising out of the Editorial Committee's meeting on April 3rd:—

> Miss Joshua read the report of the sub-committee —which constituted the judicial panel—for clinical articles published in THE VETERINARY RECORD during 1956. The final decisions of the judges were as follows:—
>
> *Class I*, for the best paper, having a clinical application, by an author or authors in private veterinary practice.
>
> 1st. "Inguinal Hernia in Sheep," by Andrew E. Orr of Lanark. (January 7th, p. 2.)
>
> Equal reserves: (i) "Displacement of the Abomasum in the Cow," by Hugh Begg and W. A. Whiteford of Strathaven. (February 18th, p. 122.)
>
> (ii) "Aortic Thrombosis with Posterior Paralysis in the Cat," by Marion J. Freak of Potters Bar. (November 24th, p. 816.)
>
> *Class II*, for the best paper by an author or authors in any branch of veterinary work who have been qualified less than five years, provided that the paper is based on clinical material obtained from practical field work and not on experimental material.
>
> 1st. "Bovine Hydramnios and Hydrallantois," by P. A. Neal of the School of Veterinary Science, University of Liverpool. (February 4th, p. 89.)
>
> No reserve award.
>
> The Committee formally approved these decisions, and it was agreed that they should be brought to the attention of Council with a view to presenting the awards to the winners at the Annual Congress in August.
>
> The Chairman thanked the judges—Miss Joshua, Mr. E. P. Barrett, and Mr. J. M. Ingram—for the work they had done, and for the high standard they had set; this would be a criterion for future years.
>
> It had been agreed that one judge should be replaced each year, and Mr. C. T. Murphy was appointed to take Mr. J. M. Ingram's place on the sub-committee.

Members of the Association will join us in congratulating these authors, who are the first to win the awards named after an outstanding veterinarian, the founder and first Editor of this journal. It is the intention that, as each year passes, the winning of a William Hunting Award shall be regarded as a mark of distinction in the clinical field, and the papers chosen this year have set the standard.

We hope that this announcement of the names of the winners will stimulate entries during 1957, especially from those younger workers for whom Class II has been especially provided.

THE VETERINARY COLLEGE OF VIENNA

The Second International Post-graduate Course will be held at the Veterinary College of Vienna from October 2nd to 5th, 1957. The emphasis will be on the clinical aspects of veterinary practice, and the papers will deal mainly with diagnosis and surgical procedures in large animals. Excursions of professional interest are also planned, and the fee will be A.S. 130.00.

Detailed programmes and application forms are available from: Tierärztliche Hochschule Wien (Kursbureau), Wien III., Linke Bahngasse 11, Osterreich.

THE COMMONWEALTH LIST

Mr. Albert Fredrick Sigurd Ohman, M.V.SC. (MELBOURNE), Chief Veterinary Officer, Suva, Colony of Fiji, was registered in the Commonwealth List of the Register of Veterinary Surgeons on April 12th, 1957.

UNIVERSITY NEWS

Liverpool

A party of members of the Liverpool University Veterinary Society comprising the University Veterinary Rugby Club and supporters has just completed a very successful visit to the Paris Veterinary School at Alfort. In addition to an excellent game of rugby against the Paris School which was drawn 3-3, several interesting tours were made, and there were also a number of enjoyable social occasions.

THE LONDON VAN HORSE PARADE

For the 43rd Parade of Van Horses on Easter Monday, 152 singles, four pairs, and three teams have been entered. This, considering the many difficulties with which owners and drivers have to contend, is regarded as a very satisfactory entry.

The veterinary examination will start in Chester Road at 9.45 a.m. Judging will start at 10 a.m. and continue throughout the morning. The Grand Parade of Winners and presentation of prizes by the President, Miss Gladys M. Yule, will be held at 12 noon.

Eighteen farriers have entered for the certificates of merit awarded to the best shod horses in good working condition. All horses entered for this competition will be specially examined by the veterinary inspectors.

PERSONAL

Births

OWEN.—On March 31st, 1957, to Pamela and Anthony Owen, M's.R.C.V.S., at The Leopards, Prizet, Helsington, Kendal, Westmorland, a son, Peter William, brother to Charlotte.

SIMONS.—On April 11th, 1957, to Kathleen (*née* Hyde) M.R.C.V.S., and Michael Simons, M.R.C.V.S., 8, Cambridge Road, Teddington, Middlesex, a daughter, Susan Elizabeth Barbara.

R.C.V.S. OBITUARY

We record with regret the deaths of the following members of the profession:—

INGLIS, George Clark, 12, Bedford Place, Alloa, Clackmannan. Graduated Edinburgh, December 15th, 1908; died April 7th, 1957, aged 72 years.

MACHIN, Reginald, 55, Bell Street, Henley-on-Thames, Oxon. Graduated London, July 11th, 1930. Died March 15th, 1957.

COMING EVENTS

April

27th (Sat.). Annual General Meeting of the Association of State Veterinary Officers in the auditorium of the Wellcome Research Institution, 183-193, Euston Road, London, N.W.1, 4 p.m. The Annual Dinner will be held at the Café Royal, 6.30 p.m.

May

1st (Wed.). Meeting of the Southern Counties Veterinary Society at the Royal Hotel, Winchester, 7.30 p.m.

2nd (Thurs.). Annual General Meeting of the Society of Practising Veterinary Surgeons at the Grand Hotel, Birmingham, 2.30 p.m.

Annual General Meeting of the Central Veterinary Society at the Royal Veterinary College, Camden Town, N.W.1, 6 p.m.

3rd (Fri.). General Meeting of the Yorkshire Veterinary Society at the Royal Station Hotel, York, 2.30 p.m.

Meeting of the Mid-West Veterinary Association at the University of Bristol's Veterinary School, Langford House, Langford, 2.15 p.m.

General Meeting of the North of Ireland Veterinary Association in the Lecture Hall of the Pharmaceutical Society, 73, University Street, Belfast, 7.30 p.m.

8th (Wed.). UFAW Symposium on "Human Technique in the Laboratory" in the Harkness Hall, Birkbeck College, Malet Street, London, W.C.1, 9.45 a.m.

Fifteenth Annual General Meeting of the Society of Women Veterinary Surgeons at Glaxo Laboratories, Ltd., Greenford, Middlesex, 11.30 a.m.

9th (Thurs.). Annual General Meeting of the Essex Veterinary Society at the Essex Institute of Agriculture, Writtle, Nr. Chelmsford, 7.30 p.m.

15th (Wed.). Annual General Meeting of the A.V.T. & R.W.s Scottish Regional Group at the Hannah Dairy Research Institute, 10.50 a.m.

Meeting of the Section of Comparative Medicine, Royal Society of Medicine, at the Society's House, 5 p.m.

17th (Fri.). Meeting of the R.A.V.C. Division at the National Institute for Research in Dairying, Shinfield, Reading, 11 a.m.

18th (Sat.). Annual Dinner of the R.V.C. '52 Club at Ye Miller of Mansfield, Goring.

24th (Fri.). 165th Annual Ball of the Royal Veterinary College Students' Union Society at the Royal Veterinary College, Camden Town, N.W.1, 9 p.m.

June

13th (Thurs.). Annual Dinner of the R.A.V.C. Officers' Club at the Grosvenor House, Park Lane, London, W.1.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax

Kent. Emmetts Farm, Ide Hill, Sevenoaks (Apr. 11).

Lincs. Sunnygate, Wickenby (Apr. 8).

Norfolk. Roydon Hall Farm, Roydon, Diss (Apr. 8).

Wilts. Norrington Farm, Alvediston, Salisbury (Apr. 5).

Yorks. Lower House Farm, Paythorne, Gisburn *via* Clitheroe (Apr. 8); Skiff Farm, Holme on Spalding Moor (Apr. 9).

Fowl Pest

Lancs. West Moss Farm, Ballam, Lytham St. Annes; White Lodge, Ballam (Apr. 6); Rose Villa, Whittingham Lane, Grimsargh; The Bungalow, Haighton, Preston (Apr. 7); Walmer Hall, Dob Lane, Little Hoole (Apr. 8); Clifton Grange, Clifton (Apr. 9); Parkland, Liverpool Road, Hutton; Four Acres, Dumacre Lane, Longton; Old School House, Smithy Lane, Much Hoole, Preston (Apr. 10).

Yorks. Meanwood Allotments, Leeds, 7 (Apr. 8).

Swine Fever

Cornwall. Merrifield, Rosecraddoc, Liskeard (Apr. 8).

Hants. Hill Farm, Cobbetts Lane, Yateley (Apr. 9).

Kent. East Ongly Farm, Biddenden, Ashford (Apr. 9); Larkfield Hall Farm, New Hythe Lane, Larkfield, Maidstone (Apr. 11).

Lancs. Salisbury Farm, Lumb, Rossendale (Apr. 10).

Norfolk. Heimat, Yarmouth Road, Ellingham, Bungay (Apr 8).

Lincs. Cross Roads Farm and Green Drove, Billinghay (Apr. 11).

Suffolk. Brick Kiln House, Barnham, Thetford (Apr. 11).

Yorks. Blake Hill End Farm, Northowram, Halifax (Apr. 10); Warwick House, Long Riston, Hull; West Carlton, Aldbrough, Hull; The Quarry, Womersley Road, Knottingley (Apr. 11).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

Lungworms of British Sheep

Sir,—*Dictyocaulus filaria, Muellerius capillaris* and *Protostrongylus rufescens,* are the only lungworms of British sheep recorded in text-books of veterinary parasitology. The occurrence of a fourth species, *Cystocaulus ocreatus,* has been recognised for three years and a brief report is in the hands of the publishers. Recent examinations of material from sheep pastured on the Wiltshire Downs indicates, however, that several other species occur. Some of these appear to be new and it will be necessary to examine further specimens before describing them in detail. One species which has been definitely identified is *Neostrongylus linearis.* So far as we are aware it has not hitherto been recorded in Great Britain, although it is prevalent in parts of S. Europe.

N. linearis is a fine, thread-like worm, similar in its general characteristics to *M. capillaris.* Like this species it is found within the lung parenchyma although it may sometimes be recovered from the bronchioles.

The female worms are 13 to 16 mm. long and 0.03 to 0.035 mm. broad. They are very similar to the females of *M. capillaris* with which they may be readily confused, but careful examination of the tail end reveals the presence of a cuticular expansion around the vulva which serves as a distinguishing feature.

The male worms are more easily recognised. They are smaller than the female worms, being 5.5 to 6 mm. long and 0.022 to 0.028 mm. broad. There is a well-defined bursa and a pair of very characteristic spicules which are long and slender, being of unequal length. The longer of the two measures 320 to 360μ and the shorter, 160 to 170μ. The crura of the gubernaculum is easily visible as is the telemon.

The first stage larvae are smaller than those of *M. capillaris,* being about 260μ in length, but otherwise they are very similar, having a wavy tail and dorsal spine.

Yours faithfully,

J. H. ROSE,
J. F. MICHEL.

Ministry of Agriculture Laboratory,
Weybridge.

S. T. HARRISS.

Ministry of Supply,
Porton Down.

April 11th, 1957.

Bovine Obstetrics

Sir,—In the absence of Mr. Straiton, who is at present abroad, we would like to reply to Mr. Walsby who, despite his animosity to the ideas expressed, has failed completely to add any constructive criticism unlike your more experienced correspondents.

We have been professional colleagues of Mr. Straiton for from 3 to 10 years, and during that time we have shared his experience in the evolution of, and have discussed on many occasions, this apparently new obstetrical technique. We wish to endorse completely the statements made in his article.

Mr. Straiton *did* perform many bovine caesarean sections, and did in fact publish an early article on the subject in THE VETERINARY RECORD during 1947. Parts of this article are now quoted in Benesch & Wright.

"Gad, Sir," the presentations mentioned are surely not *malpresentations* even to a beginner—they are merely a description of the methods adopted by us to deal with the apparently over-sized foetus.

Your correspondent asks for scientific evidence—we ourselves could fill several pages of THE VETERINARY RECORD with clinical data, but we know that the publication was presented as a practical statement of facts as opposed to the text-book attitude in the firm belief that it would be of some value to the profession.

Yours faithfully,

D. P. McINTEE,
A. L. L. McKERRELL,
J. SOMMERVILLE.

132, Lichfield Road,
Stafford.

April 15th, 1957.

Sir,—I have read Mr. Straiton's article and letter with interest—and I may say with mixed feelings.

Most people are agreed that a calving cow or heifer, with the foetus presented normally, should be given plenty of time before any assistance is given. Surely, however, the time limit has arrived one or two hours after the rupture of the foetal membranes? A dry calving will do much more harm to the mother than will traction sensibly and evenly applied. I think that farmers in general have got beyond the stage of pulling away calves with tractors! With the over-large foetus, I feel sure that no amount of time is sufficient to allow its passage, and here I feel caesarean section is indicated rather than a protracted embryotomy.

I find it difficult to accept the possibility of leaving an animal in labour for three weeks. Neither can I agree that a two-day course of treatment is sufficient in any way to prevent sepsis. Surely the foetus was in an advanced state of putrefaction and the smell at least should have been sufficient incentive to have something rather more positive done, other than learning to play dominoes, or was it "Patience"?

As to so-called ring womb in ewes, I think if Mr. Straiton practised in this area he would alter his views. Lambing commences December/January and carries on until mid-May. Naturally, a fair number of cases are seen in the year. Various methods of treatment have been tried with the following results. Time and patience inevitably resulted in the death of the ewe from sepsis, despite treatment. Stilboestrol therapy was found wanting. Caesarean section, provided that it was done in good time, gave good results. This present lambing

season, Dienoestrol (Dinovex) has been used with marked success, the cervix relaxing in four to six hours after injection. Out of a dozen or more cases, in only one instance did caesarean section have to be carried out—successfully, I may add.

Yours faithfully,

W. S. JOHNSTON.

Kirkgate,
Cockermouth,
Cumberland.

April 14th, 1957.

Sir,—With reference to Mr. Straiton's paper on bovine obstetrics I thoroughly agree with his opinions about patience, the one thing I often find the farmer lacks. There is, however, a big difference between patience and delay. After many years in a district where obstetrical work is very considerable, and which is a home of big calves, I am quite confident very many of Mr. Straiton's procedures would not be acceptable even when the size of the foetus was not the difficulty.

I do not wish to criticise Mr. Straiton on his experiences; he may have had more obstetrical work than I, but I can only think the paper may have been written more as a general warning against too early interference and the slap-dash way traction is applied.

For the benefit of the young men (the elder can look after themselves) I should like to see the matter taken up by a panel of experienced country practitioners and the report published.

Yours faithfully,

H. FRASER.

12, Abbey Mead,
Tavistock.

April 15th, 1957.

Sir,—Dystocia, both in human patients and amongst our own, will always be a problem, but its difficulties and dangers can still be greatly reduced by a better understanding of the many causes that contribute to it. Unfortunately, it is not possible to define it precisely. If it were then its incidence could be estimated with accuracy and the rôles of the various causative factors would be more clearly seen. But as is the case with the human female, where ideal conditions persist during and after the termination of a pregnancy, no single characteristic is common to all cases. It has been shown that to base the occurrence of dystocia on the duration of labour, the incidence of instrumental delivery, abortion, and so on, is futile, for not one of these criteria is found to include *all* cases of dystocia, as broadly defined. Nevertheless, it is refreshing to read the article by Mr. Straiton, and in advocating in not a few cases the Asquithian doctrine of "wait and see," he is merely following the advice given to myself and others in the Final Year in the 1913-14 Session, by that very great veterinary surgeon, the late Professor James Macqueen.

In my view, if the advice given, to say nothing of the elaborate apparatus illustrated in not a few of the text-books that have appeared from time to time, could be made use of, the human arm should suffice. I agree entirely with Mr. White that the bull does in some cases play a very large part in the incidence of this condition, as I have encountered it in both beef and milk breeds. My thanks are particularly due to a Hereford bull, who, shortly after the First World War, was characterised by the abnormal number of twins from the females he served!

As to what to do when the foetal membranes have ruptured and the foetus is dead, the guiding principles here, surely, must be (a) the nature of the presentation, (b) if decomposition has set in, and to what degree, and (c) perhaps the most important, the presence or absence of *moisture*. It is true that nature never intended to produce healthy calves, or for that matter, any offspring, that could not be born naturally; but nature could not take into account, and make allowances for, the vagaries of the modern breeder, and departures from natural selection and feeding. It could not in the case of the bulldog, and similar breeds, who have had their heads altered to satisfy the whims of seller and buyer, supply a pelvis of a different shape from that already provided.

Yours faithfully,

J. F. D. TUTT.

"Rothiemurchus,"
St. Cross,
Winchester.

April 13th, 1957.

Sir,—Mr. Straiton appears to have started something, which was no doubt his very laudable intention; and that being so I would like to join issue with him over the question of ring womb in ewes.

In this district, during the past two months, we have seen a very high incidence of pre-lambing vaginal prolapse, pre-lambing milk fever, and true ring womb, and there is no doubt in my mind that the vaginal prolapse and the ring womb, at least, have a common cause. Some of the ewes with ring womb have been left 24 to 36 hours before we have been consulted, this time-factor operating from the moment the farmer first noticed "a piece of cleansing" at the vulva. No progress has been made by the ewes during this time, and on examination they still permit, at the most, insertion of two fingers. It is my experience that such ewes have never dilated further; also that if caesarean section is not performed with despatch on a ewe with ring womb, putrefaction of the lambs is rapid, followed by death of the ewe in three or four days from anaerobic infection. On the other hand, response to a timely operation is good, resulting in a high proportion of live lambs and ewes, and rapid expulsion of the afterbirth.

Yours faithfully,

R. KENWORTHY.

Church House,
Pontesbury,
Salop.

April 14th, 1957.